

Model IPS-4 IR/UV Feedgas Analyzer

The IPS-4 analyzer utilizes both NDIR and UV optical benches in the crucial *Feedgas Analysis Application for Sulfur Recovery* (Application Note available)

Infrared analysis is a powerful tool in on-line component concentration measurement, but can be limited in accuracy due to cross interference in complex streams-many gases exhibit multiple absorptions in the IR. The IPS-4 IR/UV enables measurement of the five major feedgas components, CO₂, NH₃, H₂O, H₂S and total hydrocarbons, using the most favorable absorptions in both spectral areas and eliminating cross sensitivity concerns. Simultaneously, H₂S and NH₃ are measured in the UV using diode array detection and CO₂, H₂O and hydrocarbons in the IR and the readings cross correlated.

The UV readings are further verified (Optical Bench Electronic Verification) by evaluating detector response to known change in lamp intensity.

Features

- ▶ **Multiple Gas Capability**
CO₂, H₂O, NH₃, H₂S and total hydrocarbons
- ▶ **Analog and Digital Connectivity**
Modbus, Ethernet and Web browser-based interface
- ▶ **NEMA 4 Enclosure Houses All Components**
Designed for outdoor installation; no exposed components
- ▶ **Fully Integrated Sample Conditioning**
No need for site integration

The single beam/multiple wavelength IR technology ratios the output signal of desired component to reference, minimizing common mode errors.

The combination bench unit offers a very robust process analytical solution utilizing long lifetime optical components.

The unit is web-enabled and a heated oven for sample conditioning components where necessary is included as part of the analyzer package.

Why AMETEK?

Worldwide Support

- ▶ Sales and service support through a network of direct and factory-trained global distribution channels
- ▶ Factory, on-site training courses offered throughout the year
- ▶ 24/7/365 AMETEK Service Assistance Program

Process Gas Analysis ... Core Competency

- ▶ Providing process instrumentation to industry since 1962
- ▶ Widest range of analysis technology in the industry

Unique Solutions

- ▶ Custom-designed solutions to meet the needs of your application or process
- ▶ Process application consulting available



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Performance Specifications

Analyzer Range: ppm to 100% depending upon specific application

Linearity (independent)¹: <1% full scale range

Measurement Accuracy¹:

UV Vis: H₂S, NH₃ 1% full scale range (application dependent)

IR: Total hydrocarbons 2% full scale range, H₂O, CO₂ 1% full scale range (application dependent)

Repeatability¹:

UV Vis and IR: <1% full scale range (application dependent)

IR Total hydrocarbons: <2% full scale range)

Stability¹: 0.5% of full scale range

Zero Drift: <1.0% of full scale range over 24 hours

Response Time: <2 seconds photometric response, <30 seconds to T90

Components: up to 8 components can be measured

Inputs:

2 non-isolated analog inputs (0-5V, 0/4-20mA)

2 optically isolated discrete DC inputs

22 key piezoelectric keypad

Outputs:

265 x 64 pixel vacuum fluorescent display with multi-lingual capability (language options include English, Spanish, French, German, Russian. This is a partial listing. Contact AMETEK for more information)

4 isolated analog outputs (0/4-20 mA standard) (Eight isolated outputs optional)

8 dry relay contacts (NO, 100VA, 240 V)

RS485 isolated (supports MODBUS RTU)

RS232 non-isolated

Fast Ethernet (IEEE802.3)

AMETEK
PROCESS INSTRUMENTS

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One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
Specifications subject to change without notice.

Sample System Limits:

Sample Pressure: Up to 100 barg (1450 psig) for some configurations

Oven Temperature: Oven heater capable of maintaining 150°C (300°F)

Utility Requirements:

Electrical:
120 VAC (105 to 132 VAC), 47 to 63 Hz

240 VAC (209 to 264 VAC), 47 to 63 Hz

Power Consumption:

<700 W with oven heater
<300 W without oven heater

Instrument Air: 4.8-6.9 barg (70-100 psig)

Environmental Requirements:

Ambient Temperature: -20° to 50°C (-4° to 122°F)

Ingress protection:
IP65 and Type 4X

Enclosure Material: stainless steel

Physical Dimensions:

General purpose model:

(W x H x D): 95 cm x 66 cm x 30 cm

Back panel where supplied, typically 122 cm x 122 cm

Weight: approx. 85 kg

Approvals and Certifications:

NEC/CEC and CE General Safety requirements.

Hazardous area requirements:

General purpose model:

NEC/CEC Class I Div 2
Groups ABCD, Class II Div 2
Groups F,G, and Class III
NEC CL I Z2 AEx nA IIC T3
CL II Z2 AEx nA T3
CEC Ex nA IIC T3

Div 1 option:

NEC/CEC Class I Div 1
Groups ABCD, Class II Div 1
Groups F,G, and Class III

Zone 1 option:

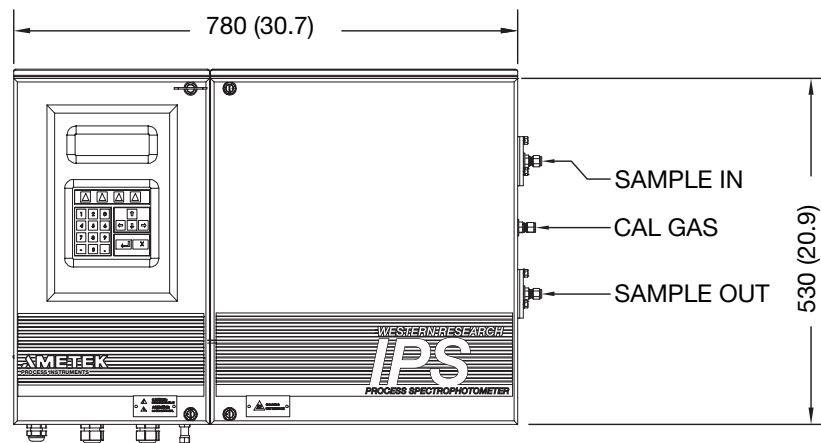
NEC CL I Z1 AEx d px IIC T3
CEC Ex d p IIC T3
II 2 G ATEX Ex d px IIC T3

Approvals and Certifications (pending):

General purpose model:

II 3 G ATEX Ex nA IIC T3

1. These specifications are based on normal operation of the analyzer as described in the manual supplement. Normal analyzer operation may include periodic zeroing and spanning.



FRONT VIEW

General purpose model shown

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